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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/931,055	08/17/2001	Tetsuya Suwa	862.C2329	2596

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EXAMINER

MENBERU, BENIYAM

ART UNIT PAPER NUMBER

2626

DATE MAILED: 03/09/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No. 09/931,055	Applicant(s) SUWA ET AL.	
	Examiner Beniyam Menberu	Art Unit 2626	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 17 August 2001.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-6 is/are allowed.
- 6) ☒ Claim(s) 7-9, 11, 13 and 14 is/are rejected.
- 7) ☒ Claim(s) 10 and 12 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 17 August 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>10/1/2001</u> . | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Specification***

1. The disclosure is objected to because of the following informalities:  
  
On page 5, line 8, "R = R = B = 208" should be "R = G = B = 208".  
  
On page 32, lines 6, 10, and 12, the term COLORc and COLORk should be WCOLc and WCOLk respectively as shown in Figure 24.  
  
Appropriate correction is required.
2. Claim 11 is objected to because of the following informalities: On line 9, "the formation" should be "wherein the formation". Appropriate correction is required.

### ***Drawings***

3. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) not mentioned in the description: The sixth step and ninth step in Figure 27 is not mentioned in the specification. Corrected drawing sheets in compliance with 37 CFR 1.121(d), or amendment to the specification to add the reference character(s) in the description in compliance with 37 CFR 1.121(b) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner,

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the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claim 7, 8, 9, 11, 13, and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5982990 to Gondek in view of U.S. Patent No. 6335800 to Balasubramanian.

Regarding claims 7 and 14, Gondek discloses an image processing method and program (column 5, lines 37-40) of forming a lookup table for transforming image data into a printing material color (column 7, lines 25-29), comprising the steps of:

forming data on sides of a plane representing a color space having white, black, and a primary color as apexes thereof (column 7, lines 39-44); and

forming data inside the plane on the basis of the formed data on the sides of the plane (Gondek discloses planar interpolation wherein the planes (neutral planes) are formed by black, white, and two primary colors forming a quadrilateral plane (column 9, lines 61-67; column 10, lines 7-15));),

wherein when the data inside the plane is to be formed, a formation method is controlled in accordance with the output signal value of black on a side from white to black (column 10, lines 26-67). However Gondek does not disclose of a triangular method of forming data.

Balasubramanian discloses of a triangular interpolation method which can be applied to the method of Gondek (Balasubramanian : column 4, lines 8-10).

Gondek and Balasubramanian are combinable because they are in the similar problem area of color conversion.

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to combine the triangular interpolation method of Balasubramanian with the conversion method of Gondek to implement triangular color interpolation.

The motivation to combine the reference is clear because Balasubramanian teaches that two-dimensional interpolation can reduce constraint (column 4, lines 25-30).

Regarding claim 8, Gondek in view of Balasubramanian teaches all the limitations of claim 7. Further Gondek in view of Balasubramanian discloses the method according to claim 7, wherein the data inside the triangle is formed using interpolation (Gondek: column 9, lines 60-67; Balasubramanian : column 4, lines 8-10).

Regarding claim 9, Gondek in view of Balasubramanian teaches all the limitations of claim 8. Further Gondek in view of Balasubramanian discloses the method according to claim 8, wherein the formation method is controlled by changing a method of selecting points for use in the interpolation (Gondek: column 10, lines 32-65).

Regarding claim 11, Gondek in view of Balasubramanian teaches all the limitations of claim 8. Further Gondek discloses the method according to claim 8, wherein the formation method is controlled by changing the direction of linear interpolation (Gondek teaches to throw away pairs of dark values during interpolation using 4 points. Thus by throwing out 2 out of the 4 values for interpolation the direction of interpolation can change (column 10, lines 31-61)).

Regarding claim 13, Gondek in view of Balasubramanian teaches all the limitations of claim 7. Further Gondek discloses the method according to claim 7, wherein the primary color includes cyan, magenta, yellow, red, green, and blue (column 7, lines 40-45).

***Allowable Subject Matter***

6. Claims 1-6 would be allowable if the rejections/objections are overcome.
7. The following is a statement of reasons for the indication of allowable subject matter:

In addition to the teachings of the claims 1 and 6 as a whole, the closest prior art of record failed to teach or suggest, "replacement of black values using a boundary formed by a line connecting two sides of the triangle where the interpolation is calculated and replacing black values in a certain region with complimentary color" Therefore, claims 2-5 are allowable for depending on claim 1.

8. Claims 10 and 12 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

#### ***Other Prior Art Cited***

1. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

U.S. Patent No. 5504821 to Kanamori et al disclose color converting apparatus.

U.S. Patent No. 6836572 to Ishiga et al disclose interpolation apparatus.

U.S. Patent No. 5508827 to Po-Chieh disclose color separation processing method and apparatus.

U.S. Patent No. 6335734 to Nagae et al disclose color conversion method.

#### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Beniyam Menberu whose telephone number is (703) 306-3441. The examiner can normally be reached on 8:00AM-4:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kimberly Williams can be reached on (703) 305-4863. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the customer service office whose telephone number is (703) 306-5631. The group receptionist number for TC 2600 is (703) 305-4700.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only.

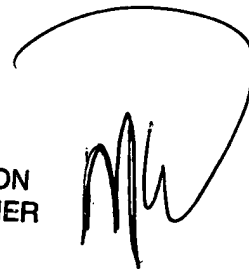
For more information about the PAIR system, see <http://pair-direct.uspto.gov/>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

***Patent Examiner***

Beniyam Menberu

BM  
03/5/2005

MARK WALLERSON  
PRIMARY EXAMINER

A handwritten signature in black ink, appearing to be 'MW', enclosed within a large, loopy, handwritten 'D' shape.